

First, with reference to the diagnosis. This is not difficult to decide when the differential characters of rheumatism or tuberculosis are remembered. In all my cases except one there was undisputed evidence of gonorrhœa, though the specific microbe could not be found in all.

Indeed, M. Ch. Aubry,¹ who has made an extensive study of the subject, affirms that gonorrhœal synovitis or arthritis is always caused by a specific urethral microbe, not the gonococcus, and that when only the latter is present clap always pursues an uncomplicated course. Lang, Judassohn, Heissler, Reblaub and others are cited by him as supporting a similar position.

In none of my cases did perfect functional restoration follow the disease. Hence, urethral arthritis must be regarded as one of those diseases in which complete resorption of inflammatory deposits rarely if ever occurs.

My observations lead me to ignore the general view that it is a masculine disease, as in my cases there was an equal proportion in each sex. Prof. Sonnenburg, of the Moabit Hospital in Berlin, in whose service I saw several of these cases, informed me that this was his experience, also.

The treatment must be energetic and antiphlogostic. Mercury, if given early, exercises a most salutary influence in the course of the malady. If rheumatism is suspected as a complicating factor, then colchicum with the alkalies are useful.

The local management of the affected part is important. In the early stage free abstraction of blood; later, blisters, lotions, the bandage etc. After the acute stages have passed, then moderate motion should be instituted if we would avoid or limit ankylosis.

MYOMECTOMY AS A SUBSTITUTE FOR HYSTERECTOMY.²

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THE objection to hysterectomy, *i. e.*, the removal of the uterus with the tumor, since it deprives the woman of her reproductive function, is self-evident, and raises the question whether, in a certain proportion of cases at least, we may not have recourse to a substitute for hysterectomy which shall adequately remove the disease and at the same time preserve in whole or in part the uterus and its appendages. We already have this in the abdominal operation for pedunculated myomata and in the

¹ Gazette hebdomadaire, March 4, 1893. Bactériologie clinique du Chancro et des Blennorrhagies simples et compliquées.

² Read before the American Gynecological Society, May, 1894.

vaginal operation for intra-uterine and submucous myomata not larger than the foetal head, and in the operation through the sacrum after the method practised by Kraske in hysterectomy for cancer. This incision of Kraske has been used, and may possibly have a limited application for the removal of myomata situated in the posterior walls of the uterus near the plane of the os internum.

The special object of this communication, however, is the presentation of an operation for the preservation, whenever practicable, of the reproductive organs in the surgical treatment of uterine myomata by laparotomy. Five years ago I reported to the Chicago Gynecological Society a case operated upon in St. Luke's Hospital, in which the abdomen was opened, the tumor was enucleated, and the cavity from which the tumor had been taken was stitched into the abdominal wound by means of catgut sutures. These sutures approximated the margins of the visceral peritoneum, covering the uterus to the margins of the parietal peritoneum around the abdominal wound—that is, the wound into the uterus was stitched to the abdominal wound after the principle of Volkmann in the treatment of abscess of the liver. The principle is the same as that popularized by Tait in the surgical treatment of pelvic abscesses. In the performance of the operation temporary hæmostasis is secured during the operation by the usual rubber ligature around the lower part of the uterus below the plane of the os internum; this ligature is usually applied before the enucleation. As soon as the tumor has been removed, the margins of the uterine wound are drawn firmly up into the abdominal wound by means of hæmostatic forceps in the hands of assistants. Then the temporary rubber ligature is loosened, but not sufficiently to cause excessive hemorrhage, and the numerous bleeding-points in the bed of the tumor are rapidly caught up by numerous hæmostatic forceps. Permanent hæmostasis is now secured by isolated catgut ligature of each bleeding-point. If parenchymatous bleeding is excessive, this is controlled by quilting the surfaces of the bed of the tumor. This quilting process is desirable also because it folds the surfaces of the cavity from which the tumor was enucleated upon themselves, and thereby greatly reduces the size of the cavity. It should therefore be done in all cases where the tumor cavity is large, even though not necessary, as a means of hæmostasis. In some cases hemorrhage will persist despite the isolated and quilting ligatures. Then it is necessary to tie the uterine arteries. I prefer the isolation and ligaturing of the arteries themselves to the ligaturing of the vessels with their surrounding structures *en masse*. In a recent case in which the tumor cavity extended deep down into the uterus, and in which the walls were quite thin, I ligatured on either side *en masse* by passing the ligature from a point inside of the tumor cavity out to a point in front of the broad ligament, through the broad ligament below the uterine artery, back again from

a point on the other side of the broad ligament into the tumor cavity. The advantage of this manner of ligature is that it confines the ligature for the most part to the tumor cavity and leaves the peritoneum clear.

Permanent hæmostasis having been secured, the temporary rubber ligature is removed and the wound opening into the tumor cavity is stitched into the lower part of the abdominal wound. The sutures should be passed not at right angles but parallel to the margins of the wound and should be locked upon one another—*i. e.*, they should be so placed that the line of union will be secured by a chain of sutures extending around the margin of the opening into the tumor cavity, each suture making a link of the chain. It is essential that the opposing surfaces be accurately and thoroughly brought together throughout in order to exclude sepsis and to secure adequate union.

Before closing the abdominal wound, the left hand is introduced back of and under the uterus so as to steady it while the tumor cavity is being tightly packed with a continuous strip, two or three inches wide, of boric gauze. This secures hæmostasis and drainage. I have had two cases of almost fatal poisoning from iodoform and bichloride of mercury gauze. Now the gauze sponges or sea-sponges which had been packed around the uterus, in order to protect the general abdominal cavity and to absorb blood, are removed; the omentum is drawn down to the uterus and the wound is closed. The gauze drain is removed at the end of a week. If removed earlier, before strong union has taken place between the visceral peritoneum at the margin of the uterine wound and parietal peritoneum at the margin of the abdominal wound, the sudden contraction of the tumor cavity may result in the breaking up of this union and may cause a communication between the abdominal cavity and the tumor cavity; this accident occurred after my second operation by this method and caused the death of the patient. The only other fatal result in an experience of five years, by this method, was from slow hemorrhage, which continued for about five years. In this case the uterine arteries should have been ligatured.

During the first three of the five years since the report of my first case, I used the method in only a limited number of cases, having been discouraged on account of the two deaths already mentioned, which occurred during this period. In the past two years I have operated about twenty-five times, with no mortality whatever. In a majority of these cases I have removed the appendages, and in some of them, as I now think, unnecessarily. The proportion of cases in which they have to be removed is decreasing with increased experience. The preservation of the appendages is a matter of the most urgent necessity, and furnishes a strong incentive to conservatism in the surgical treatment of uterine myomata, because upon their integrity rests the value of the uterus.

Unfortunately the cases are not few in which their removal is neces-

sary. Myomectomy should be supplemented by the removal of the appendages in the following three classes of cases :

1. Cases in which the appendages are the seat of such disease as would demand their removal under other conditions.

2. Cases in which the enucleation of the tumor or tumors has so injured the uterus as to render it incapable of performing its functions, especially if the injury be such as would cause cicatricial atresia at the uterine ends of the Fallopian tubes. This might be the occasion for the removal of the appendages on one side only. With increased experience this class ought to diminish.

3. Cases in which the uterus contains an additional myoma so inaccessible as to make enucleation extremely hazardous.

When the walls of the tumor cavity are thin, I have frequently divided them on either side at a point near the junction of the Fallopian tube with the uterus; ligatured the tubes and ovaries after the usual manner; drawn the stumps inside the tumor cavity and stitched them there; and then closed the lateral incisions with catgut sutures tied on the inside of the tumor cavity, so that no considerable part of any suture should be in the peritoneal cavity. This has the advantage of making the operation extra-peritoneal, but it is only practicable when the walls of the tumor cavity are thin and the mesentery of the appendages quite lax.

The anatomical result of this operation after recovery is nearly identical with the result of a successful abdominal fixation of the uterus. But the operation is open to the objection of a somewhat prolonged convalescence, and if the appendages are left another myoma may develop. On the other hand, it has the advantage of preserving in a large proportion of cases the reproductive organs—an advantage so great and so apparent as to require no comment. Moreover, hæmostasis and drainage are secured, and the dangers of abdominal infection are reduced to the minimum.

The question whether the uterus should be preserved or removed with the tumor when the appendages have to be taken away, is still *sub judice*. Unquestionably the prime factor in conservatism must be the preservation of the appendages, because when they are removed the uterus becomes physiologically useless. It should atrophy and become rudimentary, *i. e.*, it should undergo physiological removal. It may, however, fail in this, and remaining large become a pathological element, a result so often observed, after the removal of the appendages for pyosalpinx, that recently a strong movement has started, a movement which is now gathering force, for the removal of the uterus also in the surgical treatment of that disease. If we except those cases in which the myoma has been complicated with pyosalpinx, it is not probable that hysterectomy in the surgery of myoma can ever be as strongly indicated as in the surgery of pyosalpinx, because in the former disease the uterus is less liable to

give trouble from suppuration. To remove the myomatous uterus as a universal practice, at the present time and in the present state of our knowledge is, perhaps, too much like punishing a culprit for a crime which he may possibly at some future time commit.

Dr. Senn has recently applied the principle of the method of myomectomy just described to hysterectomy. His modification is useful in those cases of multiple myomata in which enucleation of the tumor and the preservation of the uterus are impracticable. He dissects off the peritoneal and sub-peritoneal structures covering the tumor and uterus, making what he calls a "peritoneal cuff." He carries the dissection well down to the cervix, so as to separate the uterus and tumor from their peritoneal and sub-peritoneal shell. When the peritoneal cuff has been reflected back over the cervix, the cervix is constricted by means of the rubber ligature, and the corpus uteri together with the tumor is removed. The peritoneal cuff is now stitched into the abdominal wound, according to the principle described for stitching the tumor cavity into the wound after enucleation. The stump, constricted by the rubber ligature, sloughs out in a few days.

It would be possible to apply the same principle to Cæsarean section. After the removal of the contents of the uterus, the margins of the uterine wound could be stitched into the abdominal wound, and the uterine cavity packed with gauze. The after-treatment would be the same as in myomectomy. This extra-peritoneal treatment of the uterine wound, with its thorough capillary drainage, may prove safer than the usual intra-peritoneal method of suture; moreover, in case of subsequent pregnancy, the uterus being attached to the abdominal wall, a direct incision into the uterus could, perhaps, be made without invading the abdominal cavity. This would make any future Cæsarean section relatively safe.

The surgical treatment of uterine myomata must not be confined to any one operation. Radical extirpation of the uterus and the appendages is often indicated. I submit whether the preservation of these organs is not often imperative.

TREATMENT OF INOPERABLE MALIGNANT TUMORS WITH THE TOXINES OF ERYSIPELAS AND THE BACILLUS PRODIGIOSUS.¹

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THIS is a subject which has occupied no small portion of my time and attention during the past three years. Many of you are doubtless familiar with my previous paper, "The Treatment of Malignant Tumors

¹ Read before the American Surgical Association, Washington, May 31, 1894.